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BIBLIOGRAPHY

SOIL MECHANICS LITERATURE PUBLISHED DURING 1951-1952

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Note

This Bibliography was originally prepared for the Associate Committee on Soil and Snow Mechanics of the National Research Council. It includes Canadian references as well as those which are of general interest and widely available. The material included was taken from current literature from January 1951 to August 1952.

February 1953

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BIBLIOGRAPHY OF SOIL MECHANICS LITERATURE

PUBLISHED DURING 1951 AND 1952

Acum, W. E. A. and L. Fox
Computation of load stresses in a three-layer elastic system. (In Géotechnique, v.2, n.4, Dec. 1951, p. 293-300)

Formulae are given for the horizontal and vertical stress components, and the results are presented in tabular form. Results are given for a wide range of parameters using Burmister's method of computation.

Aldrich, H. P.
Importance of the net load to the settlement of buildings in Boston. (In Boston Society of Civil Engineers, Journal v.39, n.2, April, 1952, p. 166-190)

A study of several buildings founded on Boston clay, stressing the importance of floating foundations.

Allin, Russell V.
The resistance of piles to penetration; 2d ed. London, E. and F. N. Spon, 1951, 126 p.

A short book dealing with the Hiley Pile Driving Formula. Includes many design tables based on penetration resistance and the Hiley Formula.

American Society of Civil Engineers. Committee on Masonry Dams 1951. Subcommittee on Uplift in Masonry Dams
Uplift in Masonry Dams. Final report. American Society of Civil Engineers. Proceedings, v.78 separate n.133, June 1952, 35 p.

A digest of information and practice to aid the designer in arriving at adequate assumptions. It is stressed that the report is by no means the final solution to this problem.

Avery, Stuart B.
Analysis of ground-water lowering adjacent to open water. American Society of Civil Engineers. Proceedings, v.77 separate n.106, December 1951, 16 p.

The author deals with the change in seepage conditions when an area is dewatered by well points close to an open body of water. Charts are presented by which the rate of pumping which will be required can be estimated, and the change in rate of pumping as the draw down progresses can be calculated.

Brannon, R. A.
Underground corrosion of piping. American Society of Civil Engineers. Proceedings, v.78 separate n.130, May 1952, 12 p.

Cadling, L. and S. Odenstad
The vane borer. An apparatus for determining the shear strength of clay soils directly in the ground. Royal Swedish Geotechnical Institute. Proceedings, n.2, 1950, 87 p.

Canada, Department of Agriculture. Prairie Farm Rehabilitation Administration
So th Saskatchewan River Project, Damsite no. 10. Report on Ge logical Test Drift. Saskatoon, December 1951, 96 p.

A complete investigation of Bearpaw shale to study the probability of sliding, the best means of tunnelling through and the permanent lining of tunnels in the shale, and to determine reliability of classification tests as an index to properties of the shale.

Canada, Department of Agriculture. Prairie Farm Rehabilitation Administration
South Saskatchewan River Project, Damsite no. 10. Report on Steel Sheet Piling Studies. Saskatoon, December 1951, 157 p.

Study to determine the effectiveness of a sheet pile cut-off wall under a dam. The conclusion was that an upstream blanket was just about as effective on this site as the cut-off wall.

Casagrande, A. and S. Wilson
Report to Waterways Experiment Station on triaxial research performed during 1950-1951. Cambridge, Harvard University, December 1951, 50 p.

Report of continued research on constant volume triaxial tests, triaxial shear strength of sensitive organic silt clay and investigation of piston friction and membrane leakage. Results of the Swedish vane borer are compared with triaxial results. A consolidation device made entirely of plastics is described.

Casagrande, Dr. Leo
Electro-osmotic stabilization of soils. (In Boston Society of Civil Engineers. Journal. v.39, n.1, Jan. 1952, p.51-83)

This paper is a summary of the author's work on electro-osmosis, in which he discusses the theory and practical applications.

Chapman, L. J.
The soil of a dirt racetrack. (In Géotechnique, v.3, n.2, June 1952, p.91-93)

This short article describes the soil and sawdust mixture used as a cushion on a horse-racing track in Toronto, Canada. It consists of 12 per cent clay, 30 per cent silt, 55 per cent fine sand and 3 per cent coarse sand. A 3-inch layer of this soil mixed with a layer of hemlock sawdust 1 inch thick has given good service for 5 years. It was reconditioned after 4 years with another 1-inch dressing of sawdust.

Chellis, Robert D.
Pile foundations -- theory -- practice -- design. New York, McGraw-Hill, 1951, 681 p.

Contains 16 chapters discussing all aspects of piling; large number of design tables.

Clark, F. A. J. and E. Mun, Sr.
A consideration of raft foundation design for small dwellings in filled areas. (In Institution of Municipal Engineers. Journal. v.79, n.7, January 1952, p. 441-455)

An approach to foundation design for small dwellings on extremely poor soil.

Colquhoun, B. H.
Some modern aspects of tunnelling. (In Engineering Journal, v.34, n.9, September 1951, p. 838-52)

This article is a summary of tunnelling methods in soft ground, beginning with the early Egyptians and tracing history through to the present. The author, a British engineer, discusses tunnelling in light of conditions likely to be met in the Montreal region.

Cook, Gilbert
Rankine and the theory of earth pressure. (In Géotechnique, v.2, n.4, Dec. 1951, p. 271-279)

Historical note

Cooling, L. F.
Some foundation problems in Great Britain. (In Building Research Congress, 1951, Division 1, p. 157-164)

Croney, D.
The movement and distribution of water in soils. (In Géotechnique, v.3, n.1, March 1952, p.1-16)

This article discusses the fundamental factors which give rise to moisture movements in soil. Methods are outlined for estimating the moisture distribution with depth beneath impervious pavements.

Elgar, W. H.
Foundations for houses and other small structures. London, Architectural Press, 1951, 92 p.

The author describes the method of safe foundation design for the various types of soil and subsoil encountered in building. He describes the behaviour and physical properties of subsoils and gives simple methods for testing them. The book is written for designers with very limited knowledge of soil mechanics.

Graham, J.
The reconstruction of Culvert no. 146, near Ayton, after its destruction by flooding in 1948. The Institution of Civil Engineers, Railway Engineering Division, Railway Paper no. 42, 1951, 37 p.

Application of electro-osmosis to dry out an embankment which had been saturated by a flood. This allowed work to proceed on the reconstruction of the culvert. Full details on the electro-osmosis installation are included.

Great Britain, D.S.I.R., Road Research Laboratory
Soil mechanics for road engineers. London, H.M. Stationery Office, 1952, 541 p.

This book was written by the Staff of the Road Research Laboratory of the Dept. of Scientific and Industrial Research, Great Britain. The book includes sections on soil physics, compaction, pavement design, soil stabilization, stability of slopes and foundations of roads and procedure for a great variety of soil tests. It is written as a reference book.

Great Britain, D.S.I.R., Building Research Station
The short bored pile foundation. Building Research Station Digest no. 42, May 1952, 8 p.

Describes technique for placing short piles for house foundations on shrinkable clays.

Hardin, John R. and William H. Booth
Lake Michigan erosion studies. American Society of Civil Engineers. Proceedings, v.78 separate n.115, Feb. 1952, 12 p.

Description of the erosion problems on Lake Michigan and various corrective methods recommended.

Harding, H. J. B. and R. Glossop
The influence of modern soil studies on the construction of foundations. (In Building R search Congress, 1951, Division 1, p. 146-155)

A review of the methods of constructing foundations. Includes a description of techniques of stabilization of difficult soils by recently developed processes.

Henkel, D. J. and G. D. Gilbert
The effect of the rubber membrane on the measured triaxial compression strength of clay samples. (In Géotechnique, v.3, n.1, March 1952, p. 20-29)

Highway Research Board
Frost action in soils; a symposium. Washington, Highway Research Board, Special Report no. 2, 1952, 385 p.

Huizinga, T. K.
Application of results of deep penetration tests to foundation piles. (In Building Research Congress, 1951, Division 1, p. 173-179)

Description of Dutch method to determine the required length and bearing capacity of a pile using a cone penetrometer for soil exploration.

Hvorslev, M. Juul
Time lag and soil permeability in ground-water observations. U.S. Waterways Experiment Station. Bulletin n.36, April 1951, 50 p.

Results of full scale tests on soil permeability measurements obtained from pumping test are present with a theoretical treatment of the data.

Hvorslev, M. Juul and R. I. Kaufman
Torsion shear tests on Atlantic muck, the Panama Canal. U.S. Waterways Experiment Station. Technical Memorandum no. 3-328, 1951, 70 p.

Johnson, A. W.
Frost action in roads and airfields; a review of literature 1765-1951. Highway Research Board, Special Report no. 1, 1952, 287 p.

Kjellman, W. and Y. Liljedahl
Device and procedure for loading tests on piles. Royal Swedish Geotechnical Institute. Proceedings, n.3, 1951, 33 p.

A Swedish test loading device is described. This device is mounted on four adjoining piles and applies the load to the fifth pile. Full details on the device and directions for its use are included.

Land reclamation at Southampton
(In Civil Engineering and Public Works. Review, v.47, n. 547, January 1952, p. 42-45)

Describes work involved in large dredging and land reclamation scheme. Involved stability analyses of slopes and dike foundations by the $\phi = 0$ method.

Lane, D. A.
The development of a meter to measure soil moisture and density by use of nuclear radiations. Saskatchewan University, Faculty of engineering, April 1952, 94 p.

Master's thesis

Legget, Robert F.
Special foundation problems in Canada. (In Building Research Congress, 1951, Division 1, p. 165-173)

Describes the effect Canadian climate and geology has on the design of foundations in Canada.

Linfield, Robert P. and H. M. Favrot
New Orleans hospital foundations designed to end settlement trouble. (In Engineering News-Record, v.147, n.11, September 13, 1951, p. 40-42)

Describes design and construction of rigid foundation on piles on site underlain by sand and clay layers.

Megaw, T. M.
Foundations at Poole power station. (In Géotechnique, v.2, n.4, Dec. 1951, p. 280-292)

Actual pressure measurements were made in soft clay and these were compared with loads calculated from the measured shear strength and cohesion of the soft clay. It is concluded that equilibrium shear strength of the clay is a more accurate basis for calculation than is the immediate shear strength.

Meyerhof, Dr. G. G.
Building on fill with special reference to the settlement of a large factory. (In The Structural Engineer. v.29, n.2, Feb. 1951, p. 46-57)

Includes useful data on settlement and bearing capacity of filled ground, and factors in design of structures on such material.

Meyerhof, Dr. G. G.
The ultimate bearing capacity of foundations. (In Géotechnique, v.2, n.4, Dec. 1951, p. 301-332)

A new theory of bearing capacity is developed on the basis of plastic theory. Field observations are found to compare very favourably with theoretical estimates.

Millar, C. E. and L. M. Turk
Fundamentals of soil science. New York, J. Wiley, 1951, 510 p.

Nash, Kevin Ll.
The elements of soil mechanics in theory and practice. London, Constable, 1951, 112 p.

A record of four lectures delivered at King's College, London. The author gives a brief survey of the theory and practice of this subject from its beginnings up to the present. There are references to relevant literature.

Nees, L. A.
Pile foundations for large towers on permafrost. American Society of Civil Engineers. Proceedings, v.7 separate n.103, Nov. 1951, 10 p.

Odenstad, Sten
The landslide at Sköttorp on the Lidan River. Royal Swedish Geotechnical Institute. Proceedings, n.4, 1951, 40 p.

Very detailed analysis of a recent landslide in Sweden. An excellent reference for this type of work.

Osterberg, J. O.
New piston-type soil sampler. (In Engineering News-Record, v.148, n.17, April 24, 1952, p. 77-78)

A description of a hydraulic sampler which permits the taking of large diameter tube samples with hand equipment.

Peterson, R.
Soil studies on Western Canada dam-building projects. (In Roads and Engineering Construction, v.90, n.8, August 1952, p. 100-102, 134-140)

This report is taken from the National Research Council's recently published Proceedings of the Fifth (1952) Canadian Soil Mechanics Conference.

Picher, R. H.
Progress report on road and concrete aggregate in parts of Ontario and Quebec. Canada, Department of Mines and Technical Surveys, Mines branch. Report no. 101, May 1951, 35 p.

Report on tests conducted on aggregates from southern Ontario and Quebec by the Dept. of Mines and Technical Surveys. The aggregates were tested to determine their durability for concrete and road aggregate.

Porter, O. J. and L. Urquhart
Sand drains expedited stabilization of marsh section. (In Civil Engineering, v.22, n.1, January 1952, p. 51-60)

Rowe, P. A.
Permanent dykes now protect Winnipeg area. (In Engineering and Contract Record, v.65, n.3, March 1952, p. 68-72)

Rowe, Peter Walter
Anchored sheet-pile walls. (In Institution of Civil Engineers. Proceedings, Part 1, v.1, n.1, Jan. 1952, p. 27-70. Paper no. 5788)

Describes experiments with model sheet pile retaining walls in cohesionless soils under various conditions of loading and anchorage.

Simonds, A. Warren
Final foundation treatment at Hoover Dam. American Society of Civil Engineers. Proceedings, v.77 separate n.109, December 1951, 22 p.

Description of the grouting of the foundation of the Hoover Dam. The effectiveness of the grouting is discussed in light of the performance of the dam since completion.

Skempton, A. W.
The bearing capacity of clays. (In Building Research Congress, 1951, Division 1, p. 180-189)

Author presents his own theoretical analysis of problem of bearing capacity, and discusses it in light of practical experience.

Skempton, A. W. and R. D. Northey
The sensitivity of clays. (In Géotechnique, v.3, n.1, March 1952, p. 30-52)

Deals with the factors which may contribute to the sensitivity of certain clays from different parts of the world.

Sloane, R. L.
Settlement analysis for high fills on compressible foundation soils. (In Roads and Streets, v.95, n.2, February 1952, p. 53-60)

Application of the theory of consolidation to the prediction of settlement of fills. The author gives a numerical example of the calculations.

Sowers, George B. and George F. Sowers
Introductory soil mechanics and foundations. New York, MacMillan, 1951, 284 p.

Spangler, M. G.
Soil engineering. Scranton, International Textbook, 1951, 458 p.

A good elementary text which covers some subjects which are normally omitted in many texts. Practical examples are few but the text is adequate for most field work and undergraduate studies.

Spangler, M. G.
The supporting strength of rigid pipe culverts. Iowa State College of Agriculture and Mechanic Arts. Bulletin no. 112, 1952, 100 p.

Contains a short reference on the friction tape (or friction ribbon) method, by which a contact pressure is determined by means of the pull required to draw the ribbons to one side, then to the other.

Stenger, F.
Bibliography of pressure grouting, 1891-1951. U.S. Bureau of Reclamation, Technical Bibliography no. 214, 1951, 101 p.

Terzaghi, Karl von
Building foundations in theory and practice. (In Building Research Congress, 1951, Division 1, p. 139-146)

A descriptive note on the role of foundations for buildings in which all types of foundations are discussed.

Terzaghi, Karl von and F.E. Richart, Jr.
Stresses in rock about cavities. (In Géotechnique, v.3, n.2, June 1952, p. 57-90)

A discussion on the influence of the shape of cavities, such as tunnels or spheroidal chambers, have on the state of stress in the surrounding rock. The mathematical methods of computing stresses are included in an appendix.

Tompkin, J. M. and S. H. Britt
Landslides: a selected annotated bibliography. Highway Research Board. Bibliography no. 10, 1951, 53 p.

Tresidder, J. O.
An investigation of subsoil conditions at a site of proposed reconstruction on A.90 at Cowdenbeath, Fife. Great Britain, Department of Scientific and Industrial Research. Note no. RN/1650, October 1951, 5 p.

Description of the various alternatives for road construction on peat.

Trow, W. A.
Frost action on small footings; progress report no. 2, Ontario, Hydro-Electric Power Commission Research division. Report no. 52-356, April 1952, 21 p.

Although no perfect solution was found for this common problem, three generally accepted remedies were tried in the field with various surprising results. Work is continuing.

Tschebotarioff, G. P. and A. A. DePhilippe
Tensile strength of disturbed and recompacted soils. Princeton, Princeton University, Department of Civil Engineering, March 15, 1952, 85 p.

Description of tensile apparatus and tests on compacted sand-clay mixtures to find the effect of cohesion.

U.S. Bureau of Reclamation
Earth manual; a manual on the use of earth materials for foundation and construction purposes. Tentative edition. Denver, June 1951, 332 p.

U.S. Department of the Army, Corps of engineers, Beach erosion board
Durability of steel sheet piling in shore structures. Technical Memorandum no. 12, July 1952, 51 p.

Results of a survey conducted by the Beach Erosion Board of existing installations.

Walker, F. C. and W. G. Holtz
Control of embankment material by laboratory testing. American Society of Civil Engineers. Proceedings, v.77 separate no. 108, December 1951, 25 p.

Field control based modified compaction tests, permeability tests, consolidation tests, and triaxial tests are discussed. Effect of moisture conditions at the time of placing on stability is discussed and it is related to field control of moisture.

Williams, T. E. H.
Soil failure during the overturning of piles. (In Engineering, v.173, n.4488, 1952, p. 134-136)

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